

**CLAIMS****[CLAIM 1]**

A piston for an internal combustion engine which is cooled by oil, the piston comprising:

5 a combustion chamber that is formed in a recessed shape on a top surface of the piston and has a rear surface cooled by the oil; and

a circular cooling cavity or a circular cooling groove which is provided on a peripheral portion of the combustion chamber, an inner wall of the cavity or the groove being cooled by the oil, wherein

10 a surface roughness of at least one of the rear surface of the combustion chamber, the inner wall of the cavity and the inner wall of the groove is equal to or less than 6.3S.

**[CLAIM 2]**

A piston for an internal combustion engine which is cooled by oil, the piston comprising:

15 a combustion chamber that is formed in a recessed shape on a top surface of the piston and has a rear surface cooled by the oil; and

a circular cooling cavity or a circular cooling groove which is provided on a peripheral portion of the combustion chamber, an inner wall of the cavity or the groove being cooled by the oil, wherein

20 at least one of the rear surface of the combustion chamber, the inner wall of the cavity and the inner wall of the groove is surface-coated to prevent oil coking.

**[CLAIM 3]**

A piston for an internal combustion engine which is cooled by oil, the piston comprising:

25 a combustion chamber that is formed in a recessed shape on a top surface of the piston and has a rear surface cooled by the oil; and

a circular cooling cavity or a circular cooling groove which is provided on a peripheral portion of the combustion chamber, an inner wall of the cavity or the groove being cooled by the oil, wherein

a surface roughness of at least one of the rear surface of the combustion chamber, the inner wall of the cavity and the inner wall of the groove is equal to or less than 6.3S, and

the at least one of the rear surface of the combustion chamber, the inner wall of  
5 the cavity and the inner wall of the groove is surface-coated to prevent oil coking.

[CLAIM 4]

The piston for the internal combustion engine according to claim 2 or 3, wherein the surface coating is a thin layer of a self-cleaning catalyst.

[CLAIM 5]

10 The piston for the internal combustion engine according to claim 2 or 3, wherein the surface coating is a thin layer of a porcelain enamel coating.

[CLAIM 6]

The piston for the internal combustion engine according to claim 2 or 3, wherein the surface coating is a thin layer of a polysilazane silica coating.